

Transient Voltage Suppressor

Features

- IEC 61000-4-2(ESD)±15KV(air), ±8KV(contact)
- IEC61000-4-5(Lightning) 4A (8/20uS)
- IEC61000-4-4(EFT) 40A (5/50nS)
- 96 Watts peak pulse power (tp=8/20μ S)
- Low capacitance: 0.25pF (Typical)
- Low clamping voltage
- Weight approx. 1.0 mg
- Moisture sensitivity level: Level 1
- Small package: DFN1006-2L

Exterior



DFN1006-2L


Application information

- Serial ATA
- Desktops, Servers and Notebooks
- Cellular Phones
- MDDI Ports
- USB2.0 Data Line Protection
- Display Ports
- HDMI

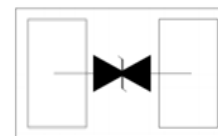
Package (top view)



Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003
	Mean lead free

Schematic



Part Number and Electrical Parameter

Part Number	$I_{DRM}@V_{DRM}$		$V_{BR}^{①}@I_R$		$V_c@I_{pp}^{②}$		$V_c@I_{pp}^{②}$		$C_o^{③}$	
	μA	V	V	mA	V	A	V	A	pF	
	MAX		MIN		MAX		MAX		TYP	MAX
BV-FA05UCA	0.1	5	6	1	16	2	24	4	0.25	0.4

Absolute maximum ratings measured at T= 25°C RH = 45%-75% (unless otherwise noted).

① VBR is measured at $I_R=1mA$

② Surge Waveform: 8/20μ S.

③ Off-state capacitance is measured in VDC=0V, VRMS=0.3V, f=1MHz

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Part Numbering System

Mark

BV FA 05 U C A
(1) (2) (3) (4) (5) (6)

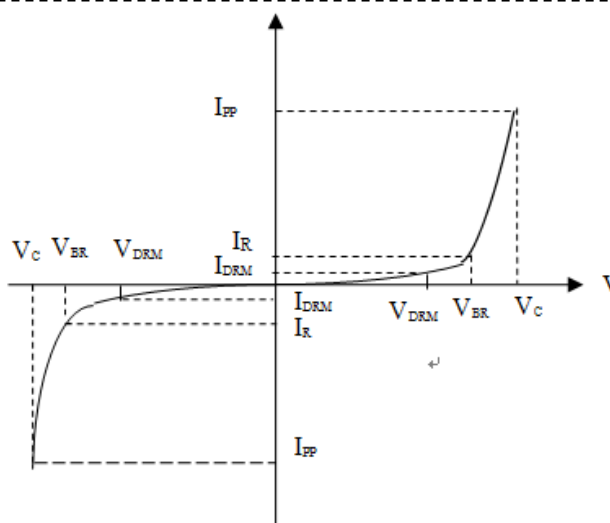
- (1) Bencent Transient Voltage Suppressor
- (2) Package:DFN1006-2L
- (3) Off-state Voltage: 5V
- (4) Low Capacitance
- (5) Bidirectional
- (6) Bencent intenal code



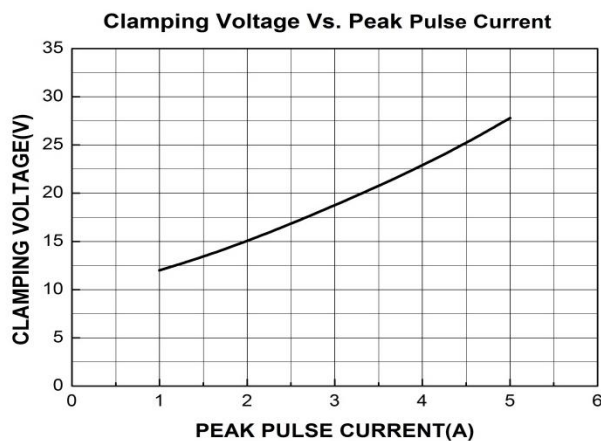
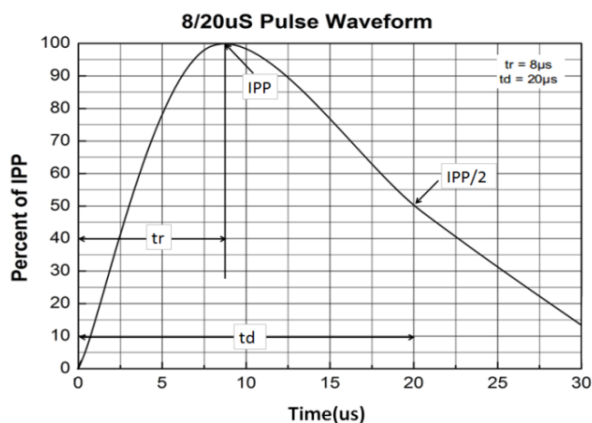
5BU: Part Number

V-I Curve

Parameters	Definition
V_C	Clamping voltage
I_{PP}	Surge waveform 8/20 μ s
V_{DRM}	Stand-off Voltage
V_{BR}	Breakdown Voltage
I_{DRM}	Reverse Leakage Current
I_R	Test current
P_{PP}	Peak Pulse Power Dissipation



Typical Characteristics



Thermal Considerations

symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-40 to +125	$^{\circ}C$
T_S	Storage Temperature Range	-55 to +150	$^{\circ}C$

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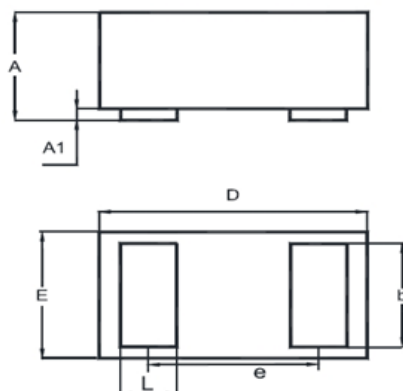
Version: A2 2019-04-24

Environmental Characteristics

Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: $125\pm 3^{\circ}\text{C}$ Bias= $80\%V_{\text{DRM}}$ Time:168H
High Temperature Life Test	Temperature: 150°C Time:168H
High-low Temperature Cycle test	Temperature: From -40°C to 125°C Dwell time : 30min,10~100cycles
High Temperature &High Humidity Test	Temperature: 85°C Humidity:85% Time:168H
Pressure cooker Test	Temperature: 121°C , 2atm. Humidity:100% Time:24H
Resistance of soldering heat	Temperature: $260\pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

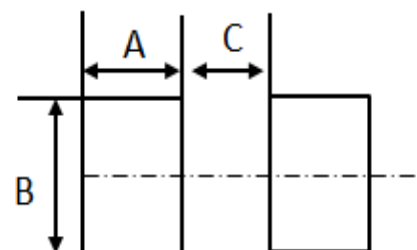
Note: The above testing items can be specified by customer's special request

Product Dimensions



REF	mm	inch
A	0.45~0.55	0.018~0.022
A1	0.00~0.05	0.000~0.002
D	0.95~1.05	0.037~0.041
E	0.55~0.65	0.022~0.026
b	0.40~0.60	0.016~0.024
e	0.64BSC	0.025BSC
L	0.15~0.35	0.006~0.014

Recommended Soldering Pad

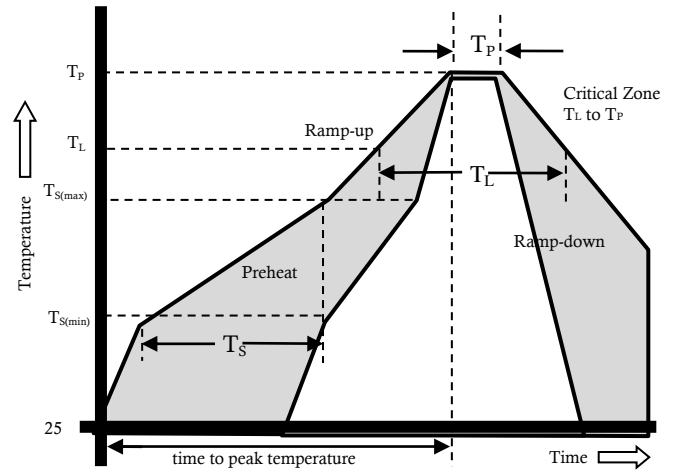


REF	mm	inch
A	0.35	0.014
B	0.60	0.024
C	0.35	0.014

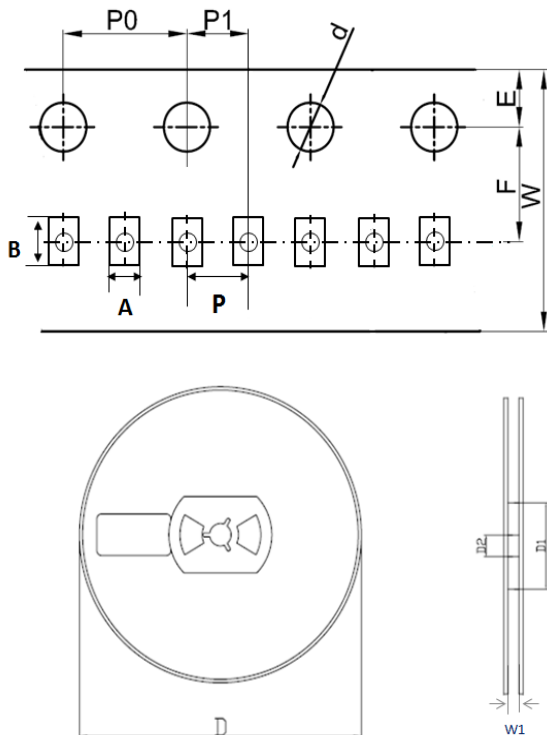
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Reflow Profile

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (min to max)	60 – 180 secs
Average ramp up rate (Liquid) Tamp (T _L) to peak		3°C/s max
T _S (max) to T _L - Ramp-up Rate		3°C/s max
Reflow	- Temperature (T _L) (Liquid)	217°C
	- Temperature (T _L)	60 – 150 secs
Peak Temperature (T _P)		260±0/-5 °C
Time within 5°C of actual peak Temperature (T _P)		30secs
Ramp-down Rate		6°C/s max
Time 25°C to peak Temperature (T _P)		8 mins max.
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	0.70±0.05	0.028±0.002
B	1.15±0.05	0.045±0.002
d	1.50±0.1/-0	0.059±0.004/-0
D	178.00±2.00	7.008±0.079
D1	55.00±3.00	2.165±0.118
D2	13.00±0.50	0.512±0.020
E	1.75±0.10	0.069±0.004
F	3.50±0.20	0.138±0.008
P	2.00±0.20	0.079±0.008
P0	4.00±0.20	0.157±0.008
P1	2.00±0.20	0.079±0.008
W	8.00±0.20	0.315±0.008
W1	9.50±1.00	0.374±0.039

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	10,000	300,000	178	390	370	220